

# PUBLIC HEALTH REPORT

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## Hazardous Waste Disposal

More than 70 million tons of solid wastes are produced each year in California as a result of domestic, industrial and agricultural activities. Hazardous waste represents only a small fraction of the total solid waste production, but it presents serious public health and environmental problems, alleviation of which often requires special handling and disposal procedures and techniques.

Hazardous materials include, among other things, some medical, chemical and industrial wastes and explosives, used pesticide containers and radioactive wastes. Wastes may be solid, semi-solid, or liquid, and they represent various levels of danger because they are toxic, infectious, irritant, corrosive, explosive, flammable, radioactive or strong sensitizers.

Handling procedures expose workers to such materials by direct contact or inhalation; for instance, they may handle aqueous industrial wastes or breathe vapors from evaporating solvents such as used cleaning solutions. Disposal equipment operators have been hospitalized after handling toxic chemicals or crushing containers filled with explosive chemicals. Personnel at disposal sites often do not know the content of such containers or the toxic nature of the materials in them.

Hospitals and medical and veterinary clinics generate many hazardous wastes which must be discarded safely, including infectious materials, sharp medical instruments, needles, syringes and drugs. Refuse collectors come into contact with

infectious wastes when servicing medical facilities, or they may receive cuts or punctures from some of these objects. The public is endangered if these are thrown into an open dump where access is unrestricted and scavengers can handle them.

Under the California Administrative Code, certain kinds, quantities and concentrations of radioactive waste may be released into sanitary sewerage systems. Radioactive waste packaged in accordance with regulations of the U.S. Department of Transportation may be transferred to licensees authorized to receive it. It is then taken to authorized land burial sites for burial. At present there is no authorized site in California, the nearest one being in Nevada.

The State Health Department is one of several federal, state and local agencies sharing responsibilities for the management of hazardous waste in California, protecting workers in industry and at disposal sites, and safeguarding the general public. In studying solid waste management planning efforts, the Department learned that hazardous wastes in some instances are being disposed of in a manner which creates public health and environmental problems. It was also apparent that technological improvements and standardization of procedures were needed.

Altogether, there are about 700 general use disposal sites in California. A small number are designated as suitable for disposal of hazardous wastes, and they are set up to take industrial sludges, slurries and spent liquids, thus receiving most of the hazardous waste produced. Some sites will accept only industrial wastes. Others accept a combination of general solid wastes and industrial wastes. Other dangerous wastes are disposed of in conjunction with industrial waste processing facilities and in on-site disposal areas of certain industrial plants. Because there are not enough industrial waste disposal sites in the state, some general refuse sites take limited quan-

tities of unauthorized industrial chemical wastes. There has not been enough time, money or manpower available to monitor the sites.

Thermal decontamination by incineration and autoclaving is used to process most infectious materials and wastes. The California Administrative Code requires that infectious wastes from hospitals be incinerated or disposed of as directed by the local health officer and most such materials are destroyed by on-site incineration. It is known that on occasions when incineration equipment becomes overloaded or fails to work properly, such materials are sometimes brought to the local general refuse disposal site, often without knowledge of the site operator. Another problem is that few incinerators currently on the market can economically process medical wastes yet comply with air pollution control regulations. The increasing amount of plastic disposables in hospital waste and the increasingly restrictive air pollution regulations have compounded the problem. More stringent regulations for the temporary storage of infectious wastes in hospitals and nursing homes are now under consideration.

A recent law (AB 254) amended the Health and Safety Code to authorize destruction of hypodermic syringes and needles by grinding and disposal in sewerage systems where such disposal is authorized by the agency with jurisdiction over the system. It also permits infectious wastes (defined as any material or article which may have been exposed to contagious or infectious disease), human tissues or recognizable anatomical human remains to be disposed of by interment, incineration or any other method which the State Health Department determines

to protect the public health, instead of requiring as in the past that disposition be by interment or incineration only.

Storage and disposal of hazardous wastes from physicians' offices present the same problems as those in hospitals and nursing homes. Physicians may store wastes in garbage cans. If they are not tightly closed, flies may transmit disease organisms by contact with infectious wastes. Animals may overturn cans and scatter their contents. Children are sometimes attracted to needles, syringes, and other hazardous wastes. Refuse collectors have reported that overloaded waste cans tend to spill, so that they must handle infectious hazardous materials.

The Department, therefore, urges that physicians break or otherwise render unusable all needles and syringes before disposal and that they put infectious and other medical wastes in plastic bags which can be tied securely. If possible, bags awaiting collection should be stored in a locked container. Wastes that cannot safely be flushed to the sewer should be taken to a sanitary landfill rather than to an open dump.

The Department recommends a thorough physical examination of new employees at hazardous waste disposal facilities, with periodic medical check-ups thereafter. The physician should be alerted regarding the kinds of materials to which an employee may have been exposed so that appropriate diagnostic procedures can be undertaken for occupational diseases. Under California law, physicians are required to report cases of occupational diseases or injuries.

**102nd Annual Session**  
**California Medical Association**  
**March 10 to 14, 1973**  
**Disneyland Hotel**  
**Anaheim**